

II

BREAST-FEEDING

Fertility regulation during human lactation

**SOCIAL AND BEHAVIOURAL ASPECTS OF
BREAST-FEEDING**

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Introduction

Breast-feeding in the human and higher primates unlike the case of most other mammals, is learned rather than instinctive; over a long time it has been shown to be highly labile. Its success appears to depend not only upon the capacity of the mother to lactate, i.e. to produce milk, or on the child's ability to suckle, but perhaps more significantly, on the mother's desire to breast-feed, on the availability of sufficient reference models upon which she can base her own performance and draw upon for psycho-social support during lactation. In modern settings breast-feeding is likely to involve the mother in complex and new role situations, and to become increasingly vulnerable to the social characteristics of the environment in which she operates.

In recent years there have been reports that the incidence of breast-feeding is declining and that in certain parts of the world, particularly those that are highly developed, it is now an exception rather than the rule. Concern over this and the health implications of earlier weaning and increased dependence upon breast milk substitutes has been reflected in the call for more attention to be addressed to infant nutrition education and, especially, for breast-feeding to be encouraged (WHA, 1974; Mayer, 1975).

Increased awareness of the problems associated with this decline has highlighted the fact that the trend being currently observed is not new and that until recently it has proceeded relatively unchallenged. Little systematic research has been conducted on the subject and there have been few attempts to isolate or describe the nature of the key factors involved in the evolving situation. Comparative epidemiological and behavioural analyses have been neglected; and while broad variables such as 'industrialization' and 'urbanization' are reported to be associated with changes in infant nutrition practices, little consideration has been given to understanding how, or in what population groups, these processes become translated at the mother/child level into dynamic social and behavioural forces likely to intervene in breast-feeding.

More significantly, the commonly held assumption that the trend is inevitable and irreversible—a 'function of modern life'—has meant that minimal attention has been devoted to identifying entry points in the process around which meaningful intervention strategies might be constructed.

In this discussion it is proposed to review briefly some of the characteristics reported to be associated with breast-feeding activity and to suggest areas for further study. For purposes of analysis, it is suggested that the intervening variables be classified under three main rubrics, namely those that involve the socio-physical environment, the personal environment and the task environment.

The socio-physical environment

Today lengthy breast-feeding is the norm only in traditional agrarian societies. Before this century it was universally so. Acceptable and reliable alternatives were not widely available and it was virtually axiomatic that all infants would initially be nourished on breast milk. Because of the relationship that obtained between breast-feeding and collective survival, adaptive social mechanisms evolved to facilitate it and social norms regulating potentially competing interests that might have disrupted it developed to delineate and protect maternal roles. Society and the family provided supportive structures that helped maintain the child feeding and rearing practices perceived as necessary for social maintenance within the context of the dominant ecology. Preparation and education for breast-feeding took the form of gradual and informal exposure, the witnessing of younger siblings being breast-fed and, later, peers themselves breast-feeding.*

With the emergence of new eco-systems, however, particularly urban centres in which populations were removed from primary industrial activity and became dependent upon market oriented productivity, the role of the family changed and as a result, so too did child rearing practices.

Urbanization called for extensive demographic shifts, for the migration of age selective populations most adapted to mobility and the demands of new work patterns. The extended family system based on inter-generational continuity became eroded in the sense that it was more geographically diffused and less able to function as an educational and controlling mechanism. Women, meanwhile, began to play a more active role in the paid labour force and to spend less time in the domestic setting performing traditional female activities.

For prolonged breast-feeding and other traditional child rearing practices to have continued under these circumstances would have probably required the emergence of alternative sources of education and support modelled on past procedures and practices. In fact some have appeared and Applebaum (1970), Ladas (1972), Thompson (1975), Weichert (1975) and Tylden (1976) have pointed to the relevance of such organizations as La Leche League in helping define maternal roles and provide mothers with the type of informational and psychological support required during the lactation period. Yet few societies appear to have been able to, or seen fit to, institutionalize them at a national level and in so doing

* The significance of this is highlighted by Raphael (1976) when she discusses the process of matrescence and the example among some mammals such as the elephant and dolphin, of group activities designed to provide the mother with support following the birth of the child. The importance of this for breast-feeding in the human cannot be over-estimated and pertains not only to the role played by education but also to that of settings in which breast-feeding is manifestly acknowledged and supported.

compensate for the female networks that previously surrounded and facilitated childbirth and child rearing.

Certainly what Raphael (1976) terms 'doula' systems, or quasi-familial support, systems have been slow in appearing and even such facilities as creches in, or near, places of industry, and nursing breaks that would help resolve the dilemma of the working mother who wishes to breast-feed, are rare. And one of the results of this support vacuum at a time when women are being increasingly involved in highly regimented occupational activities has been the increasing ambiguity of the mother vis-à-vis what are often conflicting interests of social, personal and familial needs and priorities.

Bornstein (1975) finds that in Tanzania, the length of time a mother has resided in an urban environment and the type of work she does in that setting is likely to determine directly her breast-feeding behaviour. Brown (1973) relates the decline in breast-feeding to the changes that take place in family structure once they move in to urban areas and studies of immigrant groups coming from traditional cultural settings to industrialized countries have reported similar patterns (Eliot *et al.*, 1975; Evans *et al.*, 1976). Jelliffe (1962) and Solien de Gonzalez (1963) in fact have suggested that the duration of breast-feeding in a community may well be indicative of the level of acculturation to a modern way of life attained by that group.

The ambiguous role of the female in industrial society has long been recognized by the World Health Organization and the International Labour Organization and legislative steps have been taken by different countries to provide suitable protection for women during pregnancy and early child rearing. However, the nature of the codes that have been adopted and the extent to which, under them, coverage is provided to all mothers, is not uniform (Richardson, 1975; De Moerloose, 1972).

The omniscience of technological values that have helped create the current dilemma is equally apparent in the health setting. For not only has the development of formula feeding based on scientific procedures appealed to mothers but, perhaps more significantly, it has attracted the medical profession too. 'Modern' and highly routinized schedules and practices have been encouraged with respect both to feeding and to the concept of early mother-child contact in general. Thus despite the importance of early physical interaction between mother and baby (Tylden, 1976; Sosa *et al.*, 1976; Klaus *et al.*, 1972; Sousa, 1975; Lind & Jäderling, 1964) it has become common practice in many hospitals to separate them for extensive periods. And the degree of early contact required for the successful establishment of breast-feeding has often been systematically limited so that by the time the mother and infant leave hospital, it is often the case that weaning is already in progress.

Over time, health professionals have become desensitized to the need for breast-feeding and, at what is a critical point in the life of the mother, sound information concerning breast-feeding has often been unavailable (Eastham *et al.*, 1976; Gillie, 1976; Jelliffe, 1975; Sacks *et al.*, 1976), and mothers have become increasingly dependent upon gratuitous and often unreliable education derived from commercial advertising.

As Vahlquist (1975) has pointed out, professionals have meanwhile failed to maintain a close scrutiny of the role played by infant food manufacturers. Yet

Sacks *et al.* (1976) in a study of primiparae similarly conclude that education must be closely coupled with supportive measures if breast-feeding is to succeed, the role of the health attendant team here necessarily taking on a greater importance than it has been prepared to play as a source of appropriate care and continued encouragement (Mobbs & Mobbs, 1972).

As an information source, the role played by the advertising of breast milk substitutes cannot be overestimated (Bader, 1976; Brown, 1973; Grantham-McGregor & Black, 1970; Orwell & Murray, 1974; Sousa, 1975; Wade, 1974) and the availability of alternatives has inevitably been a complementary catalytic force in the spread of artificial feeding (Evans *et al.*, 1976; Harfouche, 1970; Ladas, 1972; Jelliffe, 1976). Care should be taken, nevertheless, to note that the early development of the infant food industry was in part probably precipitated by the need experienced by mothers who, as a result of economic and social factors, were entering industrial spheres of activity and had little time for traditional child care.

Social values and concepts of beauty and fashion have also changed; notions of the breast as an erotic object eclipsed its nutritional function and the slim female profile has been idealized; with it a range of clothing paraphernalia has emerged that is ill designed to permit breast-feeding.

The personal environment

Socio-economic background, usually expressed in terms of social class and educational attainment, is a widely acknowledged indicator of social and health-related behaviour. It is thus not surprising that in the case of breast-feeding it should also have been reported to be an influential factor.

Implicit in the fact that breast-feeding is a learned activity, is the need for the mother, at some point or other, and with varying degrees of awareness, to make certain evaluative judgments that are themselves likely to be influenced by economic and social factors. These may concern the relative value of breast milk for her infant, the perceived role of maternity and child care, the implications that lactation and breast-feeding represent for her social and emotional life, the feasibility and the practicability of it given the nature of the setting in which she normally functions, and, finally, the different options of infant feeding available to her.

In transitional societies, where higher education is often indicative of expanded personal aspirations and the inclination to incorporate what are perceived as 'modern' values and practices, education has been seen to correlate negatively with breast-feeding (Santur *et al.*, 1970; Grantham-McGregor & Black, 1970; Bornstein, 1975). This pattern would appear to fit the model that is generally held to have emerged during the first half of this century in what are now highly industrialized countries. Recent evidence in these latter settings, however, suggests that the trend may not be consistent over time and that in highly developed societies a positive relationship between education and breast-feeding may be emerging (Salber & Feinleib, 1966; Newton & Newton, 1967; Sand & Emery-Hanzeur, 1973; Schaeffer & Hughes, 1974).

Since few of the findings relating to socio-economic background are based on

similar methodological approaches, it is difficult to make any comparative assessment of them. The trend they suggest, however, is that in societies where breast-feeding has been, and possibly still is normative, exposure to modern life styles and practices may lead to an inhibition of breast-feeding among groups whose education and occupations involve them in new social activities. Meanwhile, in settings where the popularity of breast-feeding has by now been well eroded, higher education may facilitate a more critical appraisal of the different alternative approaches to infant feeding and a desire to return to 'natural' feeding practices. Occupational and economic stability may similarly permit a broader variety of 'innovative' activities to be entertained.

Caution should nevertheless be used in interpreting data of this kind for, as Hirschman & Sweet (1974) have shown, the high degree of inter-dependency that exists between many of the composite social characteristics of socio-economic class and breast-feeding makes any extrapolation difficult. Models based on simple socio-economic hypotheses are on the whole inadequate in themselves to deal with the complex issue of maternal and nutritional behaviour.

Other characteristics of the personal environment that have been identified relate more to the nature of daily activities associated with modern life, and the fact that in a technologically oriented society, personal behaviour is increasingly appraised in terms of its practicality, the time spent in pursuing specific activities and the value they represent relative to other alternatives. Thus the perceived 'convenience' of artificial feeding is often reported as one of the governing reasons for not breast-feeding or for deciding to wean early (Kenny, 1973; Brown, 1961; Richards, 1974; Sacks *et al.*, 1976), and in great part also reflects the growing involvement of women in labour activities outside the home environment and increased demands of time placed on them.

Meanwhile as breast-feeding becomes less common, so the socially prescribed norms and support that permit its personal expression become less evident. Thus many mothers who state that they would otherwise have breast-fed do not do so because of embarrassment (Richards, 1974), and fear (Evans *et al.*, 1976), feelings that are also no doubt related to the changing role of the female breast in society and its association with sexuality and eroticism rather than reproduction and nutrition. Kenny (1973), however, reports that among younger women in industrialized societies, there appears to be a growing feeling of freedom about breast-feeding in public, a fact that should be considered in the light of other reports concerning changing patterns of infant feeding behaviour and the apparent desire among higher educated groups to return to more traditional practices.

At a more psychological level, Sloper *et al.* (1975) have noted that breast-feeding is more common among mothers who were themselves breast-fed and are aware of this. And while the finding is somewhat spurious, it may point to the need felt among mothers for a sense of continuity in child rearing and a personalized basis on which to develop their own practices. Smith (1976) has noted what may be a more significant indicator of the psychological foundation to decision making in this area of breast-feeding behaviour, and has distinguished between what he terms 'mother-centred' and 'child-centred' women, breast-feeding being more common among the latter group. Child 'interest' is similarly reported to be greater

among primiparae (Thoman *et al.*, 1972) and for breast-feeding to be more likely following a first pregnancy than later ones (Eliot *et al.*, 1975).

Throughout these findings runs a common theme of the need for education and for mothers to be availed of the type of information they require if indeed they are to be encouraged to breast-feed. The value of this and of it being carefully prepared and sympathetically delivered at crucial points during the pregnancy has been highlighted by various observers (Ladas, 1972; Mazen & Leventhal, 1972; Sousa, 1975; Grantham-McGregor & Black, 1970; Jelliffe, 1955; Gillie, 1976). Such is the nature of breast-feeding and the particular demands it inevitably places on mothers, moreover, that infant nutrition education should also be addressed to husbands and other participants in the family and personal environment who will be required to assist and otherwise support the lactating mother.

The task environment

It is evident from the above that the proclivity to breast-feed and the determination with which it is likely to be established and maintained is very much a function of the different social influences that surround and impinge upon the mother.

As a basic component of breast-feeding, however, lactation too is similarly vulnerable to psycho-social influences and, as Newton & Newton (1972) have shown, the let-down reflex is itself vulnerable to a variety of stressful conditions, especially in settings where alternatives to breast-feeding are widely available and where breast-feeding is no longer a normative practice. Thus, although it is estimated that approximately only 5% of women are likely to be physically incapable of lactation (Deem & McGeorge, 1958), 'drying-up' of milk or 'no milk' are often presented by mothers as reasons for not breast-feeding.

Research into mother-infant interactions (Russell, 1971) has indicated that the dyadic relationship that evolves is by no means a unidirectional one and that lactation may be influenced, among other things, by the intensity of the relationship between the two. Separation for prolonged periods of child from mother, as happens where rooming-in facilities are not available, may thus inhibit milk production and the mother's desire to breast-feed. The rigorous scheduling of feeding, a feature common to most modern hospital maternity practices, may thus interfere with the successful establishment of lactation and hence breast-feeding (Newton, 1973), as indeed may anxiety about the lack of knowledge a mother senses concerning breast-feeding.

Where the infant is systematically introduced to bottle feeding early during the lactation period, he may not be required to suck as vigorously in order to satisfy his appetite. When placed at a later feeding to the breast, sucking reflexes may not be strong enough to stimulate the milk flow; in turn this may mean that not only is the child's appetite at this feeding not satisfied, but that the mother, conscious of this, becomes anxious as to the cause and inhibits her let-down reflex.

Finally although not necessarily dependent upon breast-feeding, the close and repetitive physical contact provided by breast-feeding is similarly felt to be of importance for the child's psychological development (Hughes & Hawkins, 1975) as well as for his physical well being (Sosa *et al.*, 1976).

Conclusions

While most of the research that has been undertaken in the area of lactation and breast-feeding has focused on the physiological and biochemical aspects of the process, it is becoming increasingly evident that there is a strong psycho-social component which calls for more attention and systematic research. If current trends in breast-feeding are to be altered, or even, as some have optimistically proposed, reversed, then much more will need to be learned about the actual dynamics of breast-feeding and the major factors that influence it. In the absence of such data, intervention strategies and education will necessarily lack the firm scientific base that is called for.

From the point of view of the psycho-physical environment in which mothers function, for example, it is imperative that more investigations be carried out on the role played by industrial occupations in determining breast-feeding and infant feeding behaviour and the ways in which legislation might be effectively developed to help reconcile apparent contradictions and ambiguities that exist in the life of the modern woman.

The need for maternal support systems is such, however, that legislation in itself is unlikely to provide the complete answer. Maternity leave and job guarantees do not necessarily mean breast-feeding will be enhanced for, as indicated above, the range of intervening variables affecting breast-feeding is likely to be broad. It may thus be incumbent on policy makers to consider the development of 'doula' systems and encourage their active utilization. To do this, it will be necessary to know more about the needs—economic, psychological, medical, social—of mothers in different cultural and ecological settings as well as their customs and traditions.

Similarly, existing administrative approaches in many maternity hospital settings deserve attention not only for what their effect on mother-child relationships is likely to be, but more importantly, for ways in which health-related personnel might be trained to modify current practices and be more sensitive to maternal needs especially with respect to breast-feeding and infant nutrition.

Little is known about how physicians and other health personnel view infant nutrition needs, how they interact with the mother, what demands are placed on her during and immediately following maternity and why these have emerged. How health related personnel perceive their role in educating pregnant women and mothers similarly calls for further study.

At the level of the mother/child dyad itself there is a need for more knowledge about what factors are perceived by the mother to be influential in her decision about which path to take in child care and nutrition. How much she knows about her infant's nutritional needs and the relative value of different feeding and weaning methods will be a critical determinant of her behaviour, yet once again there have been few studies of this. It would be equally valuable to have a better understanding of the constraints, be they economic, social, occupational or familial that mothers in different ecological settings feel are likely to affect their behaviour and attitudes to early infant care.

At the level of the task environment the psycho-social dynamics of lactation and

breast-feeding, the factors influencing milk production and any variations in it, the range of issues likely to determine the facility with which the mother is ultimately able to feed her child and other aspects of the personal management of lactation and feeding remain relatively obscure issues even though they are critical to the promotion of better breast-feeding practices.

Breast-feeding, despite the fact that it was at one time (and in some settings still is) a matter-of-fact practice, has become a highly complex issue, one that reflects the growing influence of the modern technological world on 'natural' events. If mothers are to be effectively assisted to return to breast-feeding as the core method of infant feeding, then much more will need to be known about what has brought about the trend away from breast-feeding and what mothers need if they are indeed to return to it.

Discussion

Van Ginneken: I am also a behavioural scientist, a sociologist, and should like to add to Dr Carballo's paper. He made a plea that people involved in biomedical sciences should take the behavioural aspects more into account. It should be stressed just as strongly that the behavioural scientists ought to consider the biomedical aspects more thoroughly in their studies than they have done so far, because they are just as important. Similarly, behavioural scientists should be acquainted with the results of studies in disciplines other than their own. To give an example, there ought to be more interaction between nutritionists and demographers. The nutritionists have made various studies of breast-feeding patterns, but have not related them to fertility aspects. On the other hand, demographers have carried out many studies on the impact of lactation on amenorrhoea, but have hardly investigated breast-feeding practices. I think we need more multi-disciplinary approaches to the study of particular problems.

Thomson: As a kind of nutritionist, may I say that the number of really good nutritional studies of human breast-feeding could almost be counted on the fingers of one hand. There is astonishingly little good information—I think that Dr Van Ginneken is overestimating us.

Van Ginneken: In Jelliffe's 1955 monograph on infant feeding in the tropics there are about 40 pages of description of infant feeding patterns around the world.

Thomson: There is a huge literature, but I am referring to high-quality studies, of which there are rather few.

Mosley: Relating to the psychology of social norms, in the United States one could wish that a President's wife would breast-feed in public. It would have a fantastic effect. After decades of work by the American Cancer Society trying to alert women to breast cancer and breast cancer examinations, it was not until the wife of both the President and the Vice-President had breast cancer and reported on them publicly, that there was a total change in the attitude and willingness to discuss it openly. It even became possible to demonstrate breast examinations on television, in full detail and real life. There was a transformation in social norms almost overnight. If norms about breast-feeding could be similarly changed, society could structure itself to facilitate breast-feeding. This has already been

done in China, where women have long periods of maternity leave and are allowed time off from work to breast-feed. I contrast this with the situation in the United States where there was a series of articles in the newspapers about two young women who decided to breast-feed their children and work. They took their babies to the office, keeping them in a crib next to them. This led to a great furore, letters to the editors, with comments such as that they were acting like animals by feeding their children in public. Amazingly, the public attitude to breast-feeding which has evolved over the years in the United States is thoroughly irrational.

The last point I want to make is that we fail to realize that oral contraceptives (and even the other steroidal or pharmacological methods) were developed in modern society where the vast majority of women do not breast-feed. They have never breast-fed and have no intention of doing it. Package inserts indicate that contraceptives should not be given to breast-feeding women. These technologies were not developed for societies to which we are trying to apply them. They probably are inappropriate for these societies. I have visited China and asked a number of doctors in maternity hospitals about the use of steroid contraceptives during lactation, they replied uniformly that they did not recommend their use at that time. The women have a IUD put in, or are told to use condoms or other methods and, if pregnancy intervenes, abortion is available freely. Steroid contraception was developed for a totally different society, so perhaps we are wrong in promoting it in different social settings where breast-feeding is common.

Thomson: I agree entirely that it would be nice if the wife of some distinguished person would breast-feed in public. But what bothers me, as a male who has lived a rather sheltered life, is why breast-feeding should have an apparently higher degree of obscenity attached to it in our curious culture than even total nudity? In fine art nobody raises an eyebrow at either breast-feeding or total nudity and I could pick up any number of nude pictures from newsagents. But I do not think I would ever find breast-feeding being exhibited even in pornography. There is a barrier here which I do not understand. In societies where breast-feeding in public is the norm, is the breast regarded as erotic?

Mosley: In the Indian subcontinent in the village areas, for example, the poorer women wear the sari and do not wear a blouse underneath. The breast is not *per se* the sexual object, instead it is the legs. Therefore, they wear the long sari below the ankles, protecting the legs. People from the subcontinent might be able to talk about that more precisely, but it is clear that different societies have different erotic symbols.

Harfouche: I think that breast-feeding and its relevance to art is the newer image of motherhood. Breast-feeding, and what is seen and conveyed in art reflects to us man's concepts through the centuries of the way in which he sees motherhood. To modern man this image is different. The old image no longer exists. We have to do something about diagnosing and realizing that we now have a distorted image of the mother. This would help the mother and also society.

What is the impact of disuse of lactation? For preventive purposes, the mother might as well be advised to have a mastectomy, if she is not going to use her breasts. I should thus like to know what is the influence of breast involution and disuse on some of these mechanisms, such as prolactin levels and the breast as a potential site for cancer.

Thomson: There is a certain amount of information on the effect of maternal age at first pregnancy on breast-feeding (Baird, Hytten & Thomson, 1958). From the age of about 20, the ability to produce a given volume of breast milk falls off slowly. As regards the secular trend away from breast-feeding I do not think that there has been any evolutionary change because there has not been nearly enough time for any genetic change to occur.

The sort of analogy I use when talking to medical students about the age effect is that a woman is rather like a Rolls-Royce; produced with loving care by the manufacturer, at about 'sweet sixteen' she is ready to reproduce and to lactate; but in our curious society, she is kept 'in the garage' for some years. When we eventually press the button we are slightly surprised that she does not work quite as efficiently as she would have done had the physiological engine been started immediately on emerging from the factory after puberty.

Tyson: There is a great deal of interest in the dynamics of prolactin secretion at the time of puberty. Some evidence suggests that a rise occurs in females at the time of menarche. At menopause when the oestrogen is lost, there is a small decrease in plasma prolactin concentration. Throughout life the female maintains a prolactin level slightly higher than that of the male.

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